CLAIMS

What is claimed is:

1   1.   A method comprising:

2   initializing a pseudo-random number generator (PRNG);

3   obtaining local seeding information from a host;

4   securely obtaining additional seeding information from one or more remote and

5   independent entropy servers; and

6   stirring the PRNG with the local seeding information and the additional seeding

7   information.

1   2.   The method of claim 1, wherein the initializing a PRNG comprises initializing the

2   internal state of the PRNG with a random value.

1   3.   The method of claim 2, wherein the random value is a seed.

1   4.   The method of claim 1, wherein the securely obtaining seeding information from

2   the one or more remote and independent entropy servers is repeated for redundant

3   entropy servers.

1   5.   The method of claim 1, wherein the one or more remote and independent entropy

2   servers maintain random state pool to supply the host with the random value.

1   6.   The method of claim 1, wherein the securely obtaining seeding information from

2   the one or more remote and independent entropy servers may include using a

3   privacy protocol.

1   7.   The method of claim 6, wherein the privacy protocol comprises secure sockets

2   layer (SSL) protocol.

1   8.   The method of claim 6, wherein the privacy protocol comprises transport layer

2   security (TLS) protocol.

1   9.   The method of claim 1, wherein the stirring the PRNG comprises producing a

2   cryptographically random stream of bits.

1   10.   A method for communicating information between a host and a server in the

2   absence of standard privacy protocols comprising:

3   generating a temporary asymmetric key pair at the host, wherein the temporary

4   asymmetric key pair includes a temporary public key and a corresponding

5   temporary private key;

6   encrypting the temporary public key with the server's public key;

7   sending the encrypted temporary public key from the host to the server;

8   decrypting the host's temporary public key with the server's private key at the

9   server;

10   generating random data at the server;

11   encrypting the random data with the host's temporary public key;

12   sending the encrypted random data from the server to the host;

13   decrypting the encrypted random data using the host's temporary private key at

14   the host; and

| 15 | stirring a pseudo-random number generator of the host using the random data |
| 16 | generated by the server. |

1   11.   The method of claim 10, wherein the public key is a published number.

1   12.   The method of claim 10, wherein the private key is a secret number.

1   13.   The method of claim 10, wherein the host is a local host.

1   14.   The method of claim 10, wherein the server is a remote entropy server.

1   15.   The method of claim 10, wherein the pseudo-random number generator

2   cryptographically generates pseudo-random numbers.

1   16.   The method of claim 15, wherein the pseudo-random numbers are a stream of

2   bits.

1   17.   An entropy enhancing system comprising:

2   a local system comprising a pseudo-random number generator (PRNG); and

3   one or more remote independent systems comprising entropy servers.

1   18.   The entropy enhancing system of claim 17, wherein the local system generates

2   local seeding information.

1   19.   The entropy enhancing system of claim 17, wherein the one or more remote

2   independent systems generate remote seeding information.

1   20.   The entropy enhancing system of claim 17, wherein the entropy servers are

2   machines.

1   21.   The entropy enhancing system of claim 17, wherein the entropy servers are

2   software.

1   22.   The entropy enhancing system of claim 17, wherein the local system gathers the

2   local seeding information.

1   23.   The entropy enhancing system of claim 17, wherein the local system securely

2   gathers the remote seeding information.

1   24.   The entropy enhancing system of claim 17, wherein the PRNG is stirred using the

2   local seeding information and the remote seeding information.